

ABSTRACT

A tonometer for measuring the intraocular pressure (IOP) of an eye through the eyelid of an individual, i.e., in a non-invasive manner, includes a frame, a strain gage mounted with respect to the frame for measuring a force, a linear variable displacement transducer mounted with respect to the frame, and a processing unit in communication with the strain gage and the linear variable displacement transducer. The linear variable displacement transducer communicates with an axially movable sensing tip for measuring a distance. The processing unit operates to (i) time-synchronize signals received from the strain gage and the linear variable displacement transducer, and (ii) identify a change in the relationship between time-synchronized measurements of the force and distance. The change in the force/distance relationship correlates with the intraocular pressure of a patient and may be observed as an inflection or trough-like area in a force-distance graph.

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